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UNITED STATES NAVY

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Policy

The U. S. Navy Medical News Letter is basically an official Medical Department publication inviting the attention of officers of the Medical Department of the Regular Navy and Naval Reserve to timely up-to-date items of official and professional interest relative to medicine, dentistry, and allied sciences. The amount of information used is only that necessary to inform adequately officers of the Medical Department of the existence and source of such information. The items used are neither intended to be nor susceptible to use by any officer as a substitute for any item or article in its original form. All readers of the News Letter are urged to obtain the original of those items of particular interest to the individual.

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Notice

Due to the critical shortage of medical officers, the Chief, Bureau of Medicine and Surgery, has recommended, and the Chief of Naval Personnel has concurred, that Reserve medical officers now on active duty who desire to submit requests for extension of their active duty for a period of three months or more will be given favorable consideration.

* * * * *

Residency Training Policy for
Reserve Medical Officers on Active Duty

BUMED INSTRUCTION 1520.7, dated 4 August 1954, promulgates and prescribes the Department of Defense policy with respect to residency training programs for medical officers of the Regular Navy and U. S. Naval Reserve.

1. In addition to medical officers of the Regular Navy, Reserve medical officers who are on active duty, and who have completed their obligations for active duty imposed by the Universal Military Training and Service Act, as amended, are now eligible to compete for assignment to residency training in naval hospitals, in those specialties in which there exists a definite shortage at the time of application for such training.
2. At the present time shortages exist in the residency training program in the following specialties: Anesthesiology, Otolaryngology, Ophthalmology, Pathology, Orthopedics, Obstetrics and Gynecology, Pediatrics, and Urology.
3. Eligible and interested Reserve medical officers should make application to the Bureau of Medicine and Surgery, via the chain of command.

Letters of application should contain an agreement to volunteer for the period of residency training requested, and to remain on active duty in the Navy for a period of 1 year following completion of the training, for each year of training received. In general, the Bureau prefers to approve officers for residency training on a year-to-year basis.

4. From time to time the list of medical specialties in which shortages exist will be revised and brought up to date, to reflect the then existing needs. (ProfDiv, BuMed)

* * * * *

"More and More Power to You, Doctor"

Haiphong, Indo China
21 August, 1954

Dear Doctor Casberg,

I have been sent out on TAD to this ship which is participating in Admiral Sabin's "Passage to Freedom." That is the evacuation of the Tonkin Delta area to Saigon. I can't give you the high level figures, but the numbers are around a half a million. CTF 90 is doing the job, and this AKA 98 is part of the force. There are a great deal of interesting facets and I'd like to pass them on to you. It is absolutely fantastic to me to think that there are some doctors who think that one never gets any experiences greater than the treatment for ringworm by being a Navy MD. Let them hear the below.

We were in Subic Bay when the word came that we were to take part in the evacuation. We had to leave in two days, and there was no Op. order out yet. So we had to whip up imagination to the state of vision to figure out what would be needed. By the time we arrived here in Haiphong four and a half days later we were ready. It was then that the Op order arrived and we found that we had anticipated every point on the order, and had a few more ideas which CTF 90 received most willingly.

2000 pounds of DDT were acquired, through channels and by cumshawing from the Epidemiology section at Clark Field in the Philippines. Also four dusters, but through Boatswain ingenuity, a large compressed-air-Venturi-wind tunnel-hopper machine was made with several hoses. This we hang over the side of the ship and blow the powder down their shirts and pants. Living spaces in our holds were made, with Lister Bags for drinking water, and half oil drums for wash water; and with portable honey buckets. On the deck six ten seater latrines were made out of oil drums split lengthwise and welded together, with a hose in the forward end and a pipe going overboard on the after end. A continuous stream of salt water. The tops

were constructed Chinese fashion, with long boards to sit on their feet. You remember the Japanese Bengo, this is its sister equivalent.

I lectured to all the crew twice daily for four days on the diseases that would be brought aboard by these poor miserable refugees, and I didn't spare the punches. I believe my 300 men know all the layman can ever hope to know about Dysentery, Typhoid, Typhus, Intestinal Parasites, Malaria and Tb. And especially, they realize its infectiousness. They were inoculated (another thing I had to beg off of the sick bay at Subic as there was none left in the ware house - serums) and anti-malarial treatment was started. We set the machine shop to work making screens for every porthole on the ship.

All the plans for the messing had to be made, six tons of rice were acquired plus sardines, olive oil, corn beef, etc. The medical officer was involved in this because I have been in this part of the world and know what and how they eat. Pie tins and chop sticks were bought and made. Sawdust for the honey buckets was acquired. And the carpenters made ladders and ladders for the whole ship. Four levels to each cargo hold, and five holds. That takes a lot of ladders. The Captain had conferences late at night to get the triage set up.

When we first arrived at this bay just outside of the seaport of Haiphong we were scheduled to be the first to load. But it was changed, and three other ships were loaded first. I went over to observe the first, the Menard, and the Captain of the ship was having a very difficult time with the French Captain of the LSM that brought the refugees down the river. He could not get it across about how he wanted the LSM tied along side, Chinese fashion etc. So I went on the bridge, saluted per good line officer fashion, and introduced myself. He bellowed, "What the devil do you want?" I meekly explained that I spoke French as well as I did English and perhaps I could help him. With that he said, "Speak then man, speak . . ." I took the loudspeaker and in my best sotto voce asked the skipper of the French ship to back away, turn around etc . . . He replied with a broad smile, and gentle "merci bien" and backed away. From that time on I never left the Captain's side. I helped him handle the whole thing, speaking French to the French officers helping the unloading of the 1000 refugees from the LSM up to the AKA. I know enough Vietnamese to tell the people to walk up, faster, down, careful etc . . . so I was able to earn my pay there too.

Evidently the word got to the captains of the other vessels because each morning a dispatch comes to our ship requesting that I go over. This is good because, not only is the collateral duty of an interpreter good training, but I was able to spy on the things they had set up on their ship, and what went well and poorly. I would return to my ship in the late afternoon and get the changes made accordingly. I helped in the loading of five ships before ours.

Yesterday we loaded, and we did it in record time, with little or no trouble. We had to stop only long enough to have a baby on the deck of the

LSM. But a Stokes was lowered over the side and the mother and child brought to sick bay. The delivery was fast because it was her 9th child and there wasn't too much resistance from the pelvic floor, nor was an episiotomy needed. I should say not!

We are enroute to Saigon now, a total of a 2-day trip. We have 2217 aboard, and all is going well. The stench is pretty terrible, and it seems these poor people devour tons of rice a day. Medically there are a great assortment of things to be seen. Some I treat, many I do not because the mission is the transportation.

There are a lot of staph. infections of the scalp, that seem to be superimposed on a seb dermatitis of the scalp. There are two full blown cases of roseola. All the aged have the varieties of arthritis, and several good illustrations of that Marie-Strumpell spine. Trachoma and other eye maladies are numerous. They seem to be completely free of fungus. Their feet, in spite or perhaps because of standing for all their life in rice paddies are in excellent condition. One very severe old asthmatic who I am just keeping alive on epinephrine q4h until he debarks. All their teeth are coated with this betel nut lacquer. All these you have seen in India I know, but you don't find them in every clinic in the States. Many of the unexplained fevers I suppose fall into the Typhoid and perhaps the Typhus group. One looks like it is Rickettsial for sure. There are no lice left on them because they were thoroughly dusted, nearly bombed, when they came aboard.

Doctor Casberg, this letter is running into epistle length, but I thought you would be interested. The most pleasing thing to me is that we were able to figure out all the requirements that we needed, prior to the Op. order coming out. I think the Navy should make a policy of not telling anybody anything about their task for about three days; therefore forcing the officers to search in the foggy cerebral recesses for situations that may arise.

I feel even more strongly about the Navy as a career than I did before. I believe they will allow me to continue my TAD after it runs out next month. I am sure they will. This Medical Corps is still tops in my mind.

Please give my very best regards to Mrs. Casberg and all the younger ones. By now that hot rod should be running well. Send it on over, we can use it for the evacuation. At Haiphong I saw the famous route Number 5 that runs from Hanoi where all the citizens are milling to the sea. That hot rod would be great to clear the road of the throngs. You can hardly see the pavement for the solid block of people the whole way from Hanoi to Haiphong.

Thanks again for making this all possible for me. I'll let you hear from time to time what becomes of this JG and I assure you some day about 22 years from now I'll invite you to my dinner when I am made the Surgeon General

Very sincerely,
/s/ Tom Dooley

Washington 25, D. C.
20 September 1954

Dear Doctor Dooley:

Doctor Casberg has been kind enough to make available to me your letter written to him under the heading of Haiphong, Indochina, and date of 21 August.

I have just read it and I want to say it is a most interesting and heartening letter. It is gratifying to know that there remains at least one service doctor who appreciates the opportunity of going places and doing things. I want to commend you, Doctor Dooley, in all the sincerity and depth of appreciation at my command, for the manner in which you have manifested the attributes of enterprise, ingenuity, versatility, psychological agility, and seriousness of purpose in connection with providing for your prospective logistical needs while you were still in the Philippines and for the devotion to duty which was inherent in the lectures you gave to those accountable to you while enroute, or at least prior to your arrival at Haiphong, and lastly, for the demonstration on your part of a willingness to make yourself useful in a sphere entirely foreign to the conventional practice of medicine. I refer to your performance in the role of interpreter. In you haven't spoken an eloquent piece in support of my contention that military medicine is a specialty *sui generis*, and one that requires a special breed of man for its practice, I must conclude it is simply no use.

But, however that may be, Doctor, I can promise you one thing as a reward for your sedulity, and that is the satisfaction which singularly can come from a personal realization that you did your level best in the interest of a just cause. That kind of a reward in my book is transcended in sublimity by nothing else.

After reading your letter I feel disposed to beseech: "More and more power to you, Doctor." It is my earnest hope that good health and good fortune will continue to march with you along tomorrow's road and that some day you may become the Surgeon General of the Navy, not merely because you say that is what you want to be, but because I will leave that office soon with a sense of contentment that it will be in most worthy and "can do" hands if it ever reaches yours. I envy you in that your career and a lot of fun are still ahead of you.

With kindest regards and much gratitude,

Sincerely yours,

/s/ Lamont Pugh
Rear Admiral, (MC) USN

(The foregoing letters speak for themselves. Permission to publish was authorized by Dr. Dooley, Dr. Casberg, and the Surgeon General.)

* * * * *

Male Mortality

In 1950, the death rates in the United States for nearly all of the 64 major causes of death were substantially higher among men than among women. Female mortality was significantly higher for only 3 of the major causes: diabetes (62% higher among women), cancer of the breast, and cancer of the genital organs. It is not surprising, perhaps, that the death rates from suicide and homicide were about three times as great among men as among women, that accidental deaths were more than twice as frequent, or that the death rate from syphilis was twice as high. It may be surprising to many people, however, that the tuberculosis death rate was more than twice as high among men as among women and that men died 50% more often from poliomyelitis, and 20% more often from pneumonia and influenza.

The cancer death rate was 5% higher for white males than for white females. Cancer of the buccal cavity, pharynx, and respiratory system killed four times as many men as women.

It is interesting to note that the two types of cancer which cause more deaths among women than men, cancer of the breast and of the genital organs, are relatively more easy to detect and to cure than most other types of cancers. The only other major cause of death which seems to affect women more than men, diabetes, is also relatively easy to detect and manage. Even if it cannot be cured it need not cause early death.

Additional figures could be cited, but it is believed that enough have been given to establish the fact that the death rate for women is declining much faster than the rate for men. Figures have also been given to show that male mortality is higher for most of the major causes of death. It has been suggested that the native frailty and fragility of the male cannot be the sole cause for the higher mortality, and the hope has been expressed that study and research will be made to find other causes. At present, it is possible only to point out a few factors which may have some bearing on the problem.

The man of today certainly has some handicaps which cannot be easily cast aside. In general, he is still the main breadwinner of the family, and therefore, is inevitably exposed to the worries and pressures of modern life, as well as to its physical dangers, to a greater degree than women. However, it seems peculiar that the trend in mortality favors women at a time when more and more women have become employed, and in occupations once monopolized by men. It may be difficult to show, therefore, that occupations account in any large measure for the higher mortality among

men, although an occupational relationship should be investigated. A study by the Registrar General of England and Wales pointed out that the rise in mortality of men, in going down the socioeconomic scale, is largely a product of environment rather than of occupation. This conclusion was based on the finding that the mortality of wives of men in the various socio-economic classes showed the same rise in mortality in proceeding down the socioeconomic scale as did the mortality of the men.

Possibly the difference in the reactions of men and women to modern life, including work, has more bearing than the work itself. Men are considered more dynamic than women, and nature may have intended that their energy should be dissipated largely by physical exercise. Today physical exercise is not the necessary part of life it once was; moreover, it is assiduously avoided by some. Possibly women escape the consequences of worry, frustration, disappointment, and tension, to a greater degree than men by being more vocal about these conditions, through tears or, occasionally, through hysterics. The reaction of men, on the other hand, may be in the form of coronary disease, hypertension, or ulcers.

Men are naturally more aggressive and venturesome than women. Their aggressiveness and lack of caution might explain their higher venereal disease rate, greater addiction to alcohol, and greater tendency to homicide and accidents. It is possible that males get around more and, therefore, suffer greater exposure to tuberculosis, poliomyelitis, pneumonia, and influenza. However, it is not established whether males contract infections and communicable diseases more frequently or whether they are simply less resistant to them and recover less often.

It may be that women are better and more frequent patrons of modern medical science than are men. Sickness surveys have shown that women are ill more often than men. Women possibly have a greater tendency to stay away from work for mild illnesses than men, to go to bed sooner and stay longer, to go to see their physician earlier and return more often, and to follow their physician's instructions more faithfully.

Certainly there are many more specialists in diseases of women than in diseases of men. It is also true that federal and state governments have had special health programs for women for over a quarter of a century, but they have had none aimed specifically at improving the health of men. The health programs for women have been aimed primarily at preventing illness and death incident to the complications of childbirth, and there has been a progressive decline in deaths from such complications.

The facts raise the suspicion that men are suffering from the very ancient delusion that they are the stronger and superior sex, when as a matter of fact, only their skeletal muscles are stronger. In past ages a big biceps counted a great deal in the battle for survival, but it means little now. An inventory should be taken of the physical, mental, and emotional assets and liabilities of the male, and the knowledge used to halt the trend that has been shown.

It is not suggested that less attention be paid to the health of women, for much remains to be done for them. The time has come, however, to do more about the health of men, particularly middle-aged and older men. The male population should be aroused to take advantage of all that modern medical and public health sciences have to offer. The medical and public health professions should be made more alert to the greater hazards faced by men. (Public Health Reports, Sept., 1954; W. T. Sowder, M.D., Florida State Health Officer)

* * * * *

Essential Hypertension

The following basic points should be kept in mind in the medical treatment of essential hypertension:

1. Almost every drug used has effects other than those on blood pressure. These effects may be minimal to severe, transient to persistent, and every physician who treats essential hypertension should be familiar with them.

2. The effectiveness of any drug in reduction of blood pressure cannot be predicted. There is no substitute for trial of treatment.

3. Frequently, more than one basic preparation must be used to reduce blood pressure adequately. Where there is urgent need to reduce blood pressure, as in essential hypertension, group III or IV, it seems best to begin treatment with more than one drug, as for example, hexamethonium and hydralazine (apresoline). When the blood pressure has been reduced adequately, one drug may be withdrawn from the program of treatment to determine whether or not its use is necessary. In milder hypertension, treatment may be begun with one preparation; if the blood pressure is inadequately reduced after an appropriate time, another drug may be added or substituted.

4. Treatment with hexamethonium and pentapyrrolidinium should be initiated with the patient under observation in the hospital. The patient must learn to determine and record his own blood pressure and to regulate dosage. In some instances treatment with Veratrum preparations and hydralazine should likewise be initiated with the patient under supervision in the hospital. Incidentally, it is not adequate to control hypertension of a patient only in the hospital, the need is to control it under more nearly normal circumstances as well.

5. The essential of good treatment is reduction of blood pressure without serious complications. Unfortunately, there is much prescription of drugs in inadequate amounts and without satisfactory reduction of blood pressure even if there are no serious complications from treatment. The experienced physician persists in treatment until blood pressure is reduced

satisfactorily or until it is apparent that medical treatment is without value. There is no substitute for an informed physician and a cooperative patient.

6. In general the complications of hypertension are prevented by adequate reduction of blood pressure. However, it has been noted that death rarely occurs from azotemia, acute myocardial infarction, or cerebral apoplexy, in spite of satisfactory or fairly satisfactory control of blood pressure. In each of such instances discussed the blood pressure before treatment was very high, or the hypertension had been present for a long time. This observation emphasized the need for control of hypertension in an early phase.

As indicated in the article, the use of more than one basic preparation may be necessary for the effective and satisfactory control of hypertension. This point requires emphasis. One of the Veratrum preparations in maximal dosage, for example, 5 mg. of veriloid four times daily, may reduce blood pressure but may cause repeated episodes of hypotensive crises. Apresoline hydrochloride in doses of 200 mg. four times daily may reduce blood pressure satisfactorily but cause untoward symptoms such as arthritis, and reactions simulating lupus erythematosus. In such cases half the maximal amount of both veriloid and apresoline may reduce blood pressure satisfactorily but avoid undesirable effects. If a preparation of Rauwolfia is added the dosage of apresoline may be reduced to as little as 50 mg. four times daily. In a similar fashion the amounts of hexamethonium may be sharply diminished below that needed for adequate control of blood pressure when given alone, if one or more preparations are added to the program of treatment. The possibility of using satisfactorily two, three, or (rarely) four preparations in doses substantially less than the maximum for each preparation must frequently be considered. This may be characterized as the "multiple-minimal" method of treatment.

As in all methods of medical treatment of hypertension, the proof of effectiveness can be determined only by trial. Predictability of effectiveness of a program of treatment is of a very low order; the physician may need to try various combinations of drugs in varying doses until a satisfactory program is achieved. (Proceedings, Staff Meetings of Mayo Clinic, 25 Aug., 1954; E. V. Allen, M.D., N. W. Barker, M.D., E. A. Hines Jr., M.D., W. F. Kvale, M.D., R. M. Shick, M.D., R. W. Gifford Jr., M.D., and J. E. Estes Jr., M.D., Section of Medicine)

* * * * *

Mediastinal Emphysema

This article reports four cases of mediastinal emphysema occurring during the course of pneumoperitoneum therapy.

The onset of symptoms may start a few minutes, a few hours, or a few days after air is introduced into the peritoneal space. This fact is frequently of value in the differential diagnosis from air embolism which

usually occurs during the introduction of air. The occurrence of convulsions, characteristic of air embolism, have never been reported in mediastinal emphysema. Mediastinal emphysema frequently occurs after a sudden increase of intra-abdominal pressure due to coughing, emesis, bowel movement, or change of position.

The most common symptoms are substernal distress, throat pain, choking sensations, dysphagia, hoarseness or aphonia, and more or less dyspnea. Examination may reveal palpable subcutaneous emphysema over the abdomen or chest. Hamman described the crunching sound which can be heard over the precordium with each heart beat. Roentgenograms reveal the presence of a thin layer of air following the left or right heart border, and may also show the air in the subcutaneous tissues of the neck.

After mediastinal emphysema has occurred, air may further distribute itself (1) to the neck, producing subcutaneous emphysema in this region; (2) to the pleural space, producing pneumothorax (usually on the right); and (3) to the lung tissue, resulting in interstitial emphysema of the lung stroma (this is rare and very dangerous).

In mild cases, observation and bed rest may be all that is needed. In moderate or severe cases it is probably wise to remove air from the abdominal cavity, or at least to decrease the intra-abdominal pressure. Sedatives may be helpful to prevent anxiety and restlessness. Inhalation of oxygen may be necessary if dyspnea and cyanosis occur. If pressure in the mediastinum is severe, the introduction of a canula above the manubrium and aspiration of air by means of a pneumothorax apparatus may be performed. If pneumothorax has occurred, air may also be removed from the pleural cavity in the usual manner.

After this complication occurs, pneumoperitoneum usually is discontinued. However Banyai advised that in mild cases the pneumoperitoneum can be continued with caution. Moyer and Stein continued refills in their cases without recurrence of the complication. (Dis. Chest, Sept., 1954; M. Berger, M. D., Municipal Tuberculosis Sanitarium, Chicago, Ill.)

* * * * *

Macroglobulinemia

Waldenström was the first to describe a disease which he termed "macroglobulinemia." This showed the following main characteristics: (1) greatly increased blood sedimentation rate (BSR); (2) an increase in serum globulins; and (3) the presence of serum globulins having an abnormally high molecular weight, so-called "macroglobulins."

In addition to these constant findings, a variety of other manifestations may include: (1) history of weakness and dyspnea often of several years' duration; (2) inclination toward hemorrhages in the naso-pharynx, retina, and in the central nervous system without an increased coagulation time or

thrombocytopenia; (3) generalized swelling of lymphatic tissue, including hepatosplenomegaly; (4) vascular disturbances of the extremities; (5) normochromic anemia with changes in the bone marrow; and (6) spontaneous jellification of blood serum at room temperature with a slight increase in total serum protein.

Several laboratory tests are of value in establishing this diagnosis. The euglobulin test is technically the simplest of a number of tests designed to show abnormalities in serum proteins.

The etiology of macroglobulinemia has not been agreed upon in the relatively small number of cases described. It has been classed as one of the reticuloendothelioses, a primary disturbance in protein synthesis, or an atypical type of lymphocytic leukemia. The disease pursues a chronic course over a period of several years. It is not amenable to any known form of therapy but appears to have a considerably better prognosis than chronic lymphocytic leukemia or myeloma, both of which it may resemble.

The purpura in macroglobulinemia is of great interest and is not associated with thrombocytopenia or demonstrable abnormality of the coagulation factors. Although it is said to be uncommon it has been well documented. The theory has been advanced that this purpura is due to "endotoxic" or hyperergic damage to capillary endothelium.

It is important to differentiate the purpura of macroglobulinemia from the disease called purpura hyperglobulinemica. This condition, also described by Waldenström, is (like macroglobulinemia) characterized by purpura in the presence of apparent normalcy of the blood coagulation factors, and an increase in gamma globulins. It differs, however, in the absence of macromolecules. Waldenström reports that an additional point of differentiation lies in electrophoretic analysis of serum. Typical purpura hyperglobulinemica is said to be characterized by a flat "virus type" gamma globulin peak, while sera of macroglobulinemia patients show a sharp gamma globulin peak.

The differential diagnosis from multiple myeloma lies primarily in the absence of typical myeloma plasma cells, the lack of Bence Jones proteinuria (with the exception of two cases reported by Wuhrmann and Riva), and the lack of radiologic bone lesions. The chronic course of a macroglobulinemia also speaks against the usual malignant course of multiple myeloma.

To differentiate clinically from chronic lymphocytic leukemia is much more difficult. Course and prognosis often have great similarities in these two conditions, and the appearance of hepatosplenomegaly in some cases of macroglobulinemica may make a differential diagnosis impossible on clinical grounds alone. As in the early differentiation from multiple myeloma and purpura hyperglobulinemica, the ultracentrifuge is the final authority. (Blood, Sept., 1954; H. Wilde and A. L. Hitzelberger, University Medical Clinic, Freiburg, Germany)

Bleeding Peptic Ulcer

The management of severe bleeding from the stomach and duodenum is still a subject of controversy. Opposite poles of opinion are represented by Andresen who prefers to treat all cases of bleeding ulcer by conservative measures, and by Stewart and associates, who recommend operation for all cases of severe bleeding.

In the past four years at the Roper Hospital, Medical College of South Carolina, a middle ground has been chosen. Patients with severe hemorrhage are hospitalized under the joint care of an internist and surgeon. Blood is immediately drawn for typing, cross-matching, and determination of the hematocrit level. The bleeding, clotting and prothrombin times are also determined. As soon as type specific blood is available, transfusions are started. The patient is given a modified Sippy regimen by mouth, including 60 c.c. of milk and cream every hour. An alkali is also given every hour and antispasmodics every 4 to 6 hours. Nasal oxygen is administered as long as shock is present. Blood pressure, pulse, and the condition of the skin are checked frequently, and until the rapidity of bleeding is determined, or until the bleeding has apparently ceased, the volume of packed cells is determined every few hours. Blood transfusions are continued until the peripheral circulatory status of the patient is stable and until the hematocrit reaches a level of about 30. After this, sufficient blood transfusions are given to maintain a stable circulatory status and to maintain the hematocrit at a level above 30. During the first twenty-four hours, oral fluids are restricted to the quantities of fluid given in the diet and with the alkali, and supplementary fluids which may be necessary for hydration are given parenterally.

As far as diagnosis is concerned, if the patient has had a recent x-ray examination indicating the presence of a gastric, duodenal, or marginal ulcer, it is felt that no further radiologic investigation is indicated. When the patient's circulatory status is stabilized, x-ray films are made as soon as possible by the Hampton technique; careful examination of the esophagus is made to rule out esophageal varices; and examination of the stomach and duodenum is carried out without palpation.

In general, it has been the policy to treat all patients in this conservative manner. The patient is followed by both the physician and surgeon, and only those patients who appear to have the "fatal type of hemorrhage," as described by Heuer, are submitted to emergency operation. If the selection of these cases is made correctly, there should be no mortality from bleeding under conservative treatment and, if the selection is made promptly, the mortality rate for emergency surgery should be at acceptable levels.

The criteria for the choice of such patients for emergency operation have been repeatedly discussed in literature, and the more important of these appear to be concerned with the age of the patient, the location of the ulcer, the size of the ulcer, the chronicity of the ulcer, and the initial

response to conservative therapy. Certainly, most of the deaths from bleeding ulcer occur in older patients, and the tendency has, therefore, been to be more aggressive in operative attack on patients of advancing years with severe bleeding. Ulcers on the lesser curvature of the stomach which erode the left or right gastric arteries or their branches, and ulcers on the posterior wall of the duodenum which erode the gastroduodenal or superior pancreaticoduodenal arteries or their branches, are more likely to require emergency surgery. It has been said that the larger the ulcer and the longer it has been present, the greater is the likelihood that a dense fibrous base will be present which will prevent an eroded vessel from contracting or retracting, particularly if arteriosclerosis is also present. Such cases may thus require emergency surgery. Holman has observed that patients who respond poorly to initial conservative therapy for bleeding will be likely to continue to respond poorly, and also that recurrence of bleeding in a patient who is hospitalized and on medical therapy is a grave prognostic sign. With these criteria in mind, decision for or against surgery is made, if possible, within the first 24 or 48 hours after admission. A definite rule has not been decided upon, but one of the chief points suggesting the necessity of operative intervention has been the lack of good or sustained improvement after a reasonable attempt at blood replacement. The other factors (age, type, and location of the ulcer) also contribute to this decision, but in varying degree as part of the over-all evaluation.

Although the value of blood transfusions in the therapy of bleeding peptic ulcer is only occasionally disputed at the present time, the argument is still advanced that if too many blood transfusions are given, clotting cannot occur or a clot in a vessel will be "blown out." Few clinical data appear in support of such a conclusion, and recent experimental work seems to indicate that a bleeding vessel will be plugged by clot more quickly if blood transfusions are administered. In any case, it is felt that blood transfusions are the most important element in the conservative treatment of bleeding ulcer. A Sippy or similar-type feeding regimen seems to be valuable, whether because of a partial correction of hypotroteinemia, a diminution of hunger contractions of the stomach, or simply the providing of a substance for the acid-peptic mixture in the gastric juice to digest other than the clot at the ulcer site. Alkali is an important part of the feeding program.

A mode of combined medical and surgical therapy is presented. Emphasis is placed on the importance of giving adequate blood transfusions in the treatment of bleeding ulcer, and upon individualization of cases in choosing those which will require emergency gastric resection, and the serious prognostic significance of (1) gastric ulcer associated with severe hemorrhage and (2) poor initial response to transfusions or recurrence of bleeding after the institution of medical therapy. Patients with severe hemorrhage from gastric ulcer, and those who show a poor or unsustained response to

adequate transfusions early in the course of management, and those who bleed again after cessation of hemorrhage, have been observed to have a poor prognosis, and should be selected for emergency gastric resection. When esophageal varices have been ruled out, and it has been determined that the hemorrhage is arising from the stomach or duodenum, even if an ulcer cannot be demonstrated at laparotomy, the authors believe that empiric gastric resection should be performed. Illustrative cases are presented in the article. (Surgery, Sept., 1954; H. W. Mayo, Jr., M. D., and J. K. Owens, M. D., Medical College of South Carolina, Charleston, S. C.)

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Analysis of Electrocardiograms

An analysis of the electrocardiograms obtained from 1000 young, healthy aviators was reported 10 years ago from the laboratory of the Naval School of Aviation, Pensacola, Fla. The results of the analysis were of interest chiefly because some of the findings fell outside the range generally considered to be normal. At that time it was impossible to decide whether the normal range should be extended or whether these findings were to be attributed to unrecognized heart disease. Because these electrocardiographic abnormalities occurred in healthy persons, they were tentatively classified as "borderline," and two lines of inquiry were followed in an effort to assess their significance.

The first approach consisted in determining if the borderline abnormalities observed in the pilot group were to be found in the electrocardiograms obtained from younger subjects. Accordingly, a cardiovascular survey was carried out on 2600 healthy school children in whom degenerative heart disease was extremely unlikely. Not only were the same borderline variations discovered, but they appeared more frequently than in the pilot group. The exception to this generalization was a single instance of left bundle branch block in one of the pilots.

The second approach, which forms the basis of this report, was a follow-up study of the original group of pilots after an interval of at least 10 years:

1. Two hundred and two men had died. Trauma caused 193 deaths, disease caused 7, and the cause was unknown in 2 cases. Only 1 man died of heart disease (myocardial infarction); his electrocardiogram had been normal in 1941.

Seven hundred and three men were re-examined and only 4 were found to have objective evidence of heart disease: One had coronary heart disease with myocardial infarction, 2 had hypertensive heart disease, and one had chronic cor pulmonale. Eight other men showed enlargement of the heart by x-ray examination, without other evidence of heart disease.

Twelve others had blood pressures greater than 145/94 mm. Hg with otherwise normal findings.

3. In 639 men the 1940 and 1950 electrocardiograms were subjected to statistical analysis. The heart rate increased from a mean of 64 to 75 beats per minute, the mean P-R interval increased from 0.154 second to 0.159 second despite the increased heart rate; the mean QRS duration changed only slightly from 0.087 second to 0.085 second, and the mean uncorrected Q-T interval decreased from 0.384 second to 0.361 second. The QRS axis (mean frontal plane QRS vector) shifted to the left from 61.6 degrees to 48.2 degrees, and the T axis (mean frontal plane T vector) likewise moved slightly to the left from 42.6 degrees to 40.7.

4. The effect of change in heart rate, age, weight, and blood pressure on these electrocardiographic measurements is discussed. On the basis of these findings, ranges of normal are proposed which vary only slightly from those suggested by other authors.

5. Certain unusual cases were not included in the statistical analysis but are described briefly. These include two instances of the Wolff-Parkinson-White syndrome, two instances of complete right bundle-branch block, and one instance of complete left bundle-branch block.

6. A wide range of measurements appeared in the electrocardiograms of these healthy men, but in the individual cases the change over a 10-year period was slight. This was true both for the normal electrocardiograms and for those which fell in the borderline zone between normal and abnormal. The reliability and validity of the electrocardiographic method is discussed in the light of these findings. (Circulation, Sept., 1954; Lt. J. M. Packard, MCUSN, J. S. Graettinger, M. D., and Capt. Ashton Graybill, MC USN)

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Pylephlebitis and Liver Abscess

Pylephlebitis, first described by Waller in 1846, is a disease characterized by suppurative thrombophlebitis of the portal vein, with extension into its intrahepatic branches, and by the formation of single or multiple liver abscesses mainly in the right lobe of the liver. Although it may follow suppurative disease anywhere in the portal drainage system, and has even been reported from infected hemorrhoids, pylephlebitis has been associated with suppurative appendicitis in the majority of reported cases. It has been suggested that the suppurative process might reach the portal area through lymphatic drainage, but most cases can be explained by direct extension involving the veins of the mesoappendix, ileocolic vein and superior mesenteric vein in turn, or by blood-borne emboli. Regardless of the site of the suppurative disease, the responsible organism is most frequently *Bacillus coli*, with *Streptococcus hemolyticus* and *Staphylococcus aureus* following in that order.

The incidence of pylephlebitis and liver abscess has decreased in recent years due to earlier diagnosis and treatment of appendicitis, and possibly somewhat to the rather general use of antibiotics. The history of appendicitis, however, may be atypical and confusing¹ (as in most of the cases described in this article), accounting for a delay in diagnosis. The chill, or better, multiple chills as pointed out by Colp, are helpful when present. The presence of a laminated coprolith or fecolith in the right lower quadrant on a flat roentgenogram of the abdomen serves to focus attention on the appendix as a possible source of inflammation. There were three coproliths in the six recent cases in the series described. In a group of 100 actually inflamed appendices removed consecutively, Remington reported that fecoliths associated with gangrene and rupture of the appendix were more frequent in the 26 cases showing thrombosis of the appendiceal veins.

Once a diagnosis of pylephlebitis is suspected, vigorous supportive therapy is necessary in view of the prolonged and wasting nature of this process. Multiple transfusions help combat the anemia and hypoproteinemia which develop. Antibiotics can sterilize the blood stream as evidenced by blood cultures becoming negative, and every effort should be made to choose the proper drug by sensitivity tests when the causative organism can be cultured. Anticoagulant therapy probably is useful judging by a very limited experience with it. It may be able to prevent the spread of the thrombosis to the larger veins while the antibiotics deal with the organisms in the blood stream. Heparin in 50 mg. doses is probably preferable to dicumarol in view of the severe toxic depression of the liver which is present.

In spite of all the therapeutic methods available, the mortality of pylephlebitis with liver abscess remains high. The prognosis with a single liver abscess is better than with multiple abscesses as shown by Ochsner who found a mortality of 35.5% with a single abscess compared to 95% for multiple abscesses. Eliason was of the opinion that a single abscess was due to a septic embolus from a circumscribed venous infection and had a fairly good prognosis following surgical drainage. Of 14 cases of pylephlebitis with liver abscess, 7 had single abscesses and lived. Two of the 3 survivors in the present series had single large abscesses in the right lobe of the liver though one was multiloculated. It remains to be shown whether specific antibiotic and anticoagulant therapy can overcome pylephlebitis with multiple small liver abscesses. (Am. J. Surg., Sept., 1954; H. L. Hoffman, M.D., Newport, R.I., P. F. Partington, M.D., and A. L. DeSanctis, M.D., Cleveland, Ohio)

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Fractures of the Surgical Neck of the Humerus

Fractures of the surgical neck of the humerus are commonly grouped into adduction and abduction types, each the product of a definite mechanism, and each presenting a characteristic radiographic pattern. This simplifying of former modes of classification is advantageous, not only in describing the displacement, but also in determining treatment. It is considered that a fall on the outstretched hand and the forcible adduction or abduction of the patient's arm following the moment of impact, according to the movement of the trunk, is the main sequence of events culminating in one or other type of fracture. The abduction variety is probably commoner in adults, whereas in children adduction deformity invariably occurs.

The ordinary antero-posterior radiographs show the type of fracture, with or without impaction. Appearances in such films, however, can be deceptive, and in order to ascertain the full extent of the deformity, additional views should be taken, namely, the lateral or transaxillary projection with the tube directed into the axilla of the abducted arm and the cassette placed above the shoulder. If pain prevents the assumption of this position without anesthesia, a transthoracic projection similarly will disclose the true nature of the lesion, and will complete the radiographic evidence. In six of the seven cases referred to in this article, the fractures were characterized by marked rotation of the humeral head and anterior displacement of the shaft, such deformity being fully demonstrated only in transthoracic views, as the ordinary antero-posterior films gave little or no indication of its existence.

When such a displacement occurs reduction is difficult to achieve, because the surgeon is usually unable, during manipulation, to control the short, rotated, and abducted humeral head.

The patient is anesthetized and prepared for the application of a shoulder spica. A padded chest-piece is fitted before the manipulation is carried out. Manipulation may be performed first, the arm held in position, and a padded chest-piece applied while films are being developed to check the reduction.

If the left humeral surgical neck is involved, the surgeon grasps the patient's left elbow with his left hand, taking the patient's left hand in his right, and flexing the patient's elbow to 90 degrees. He then applies steady and controlled traction to the abducted upper arm, and gently rotates the shaft of the humerus laterally, using the patient's forearm as a lever. Counter-traction on the chest wall helps to steady the trunk and increase the pull. Two films, an antero-posterior and a lateral, are taken. It may be necessary to apply manual pressure to the shaft of the humerus to improve the position in one or other plane.

When satisfactory reduction has been obtained, a padded arm-piece is completed, fitting closely around the shoulder and well molded. When possible, without disturbing the position of the reduction, the final degree

of abduction should be below 90 degrees with the upper arm flexed slightly to approach the plane of the scapula, but moderate lateral rotation must be maintained to insure the stability of the reduction. Further films are taken and if the position is satisfactory a supporting strut may be added. Sometimes wedging may be required.

After about six weeks the arm-piece is bivalved and if union is judged to be sufficiently advanced, active abduction and medial rotation exercises are begun. As soon as active abduction above 90 degrees is possible the spica is removed and the arm supported in a sling, with a large pad of wool in the axilla. Adduction and medial rotation are necessarily limited at first, but with assiduous exercises rapid improvement in range should occur. (J. Bone & Joint Surg., Aug., 1954; T. B. Whiston, Falkirk, Stirlingshire, Scotland)

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Hexamethonium-Induced Hypotension

Since 1946, the principle of induced hypotension has evoked increasing interest among surgeons and anesthesiologists. The reports of Gardner, Hale, Gillies, and Enderby, have elucidated fully the technical details involved in the various methods devised to attain a reduction of surgical hemorrhage. The indications for employment of the hypotensive method likewise have been examined critically.

Although credited with facilitating surgical procedures and reducing the need for extensive blood replacement, the technique has been found to carry considerable risk, as evidenced by numerous reports of serious sequelae. With the exception of several studies upon isolated bodily functions, no comprehensive assay of the alterations in physiologic processes occurring in the anesthetized human subject under the influence of induced hypotension has appeared.

The primary effects of hexamethonium-induced hypotension upon the anesthetized patient were investigated. In the 14 cases studied, the average fall in direct systolic and diastolic pressures was found to be 48.8 and 44.2%, respectively.

Factors influencing the magnitude of the depressor response were investigated. Fowler's position and increased vascular tonus were predisposing conditions to the more precipitous falls in arterial pressure. Abolition of the vasopressor overshoot reflex following Valsalva's maneuver and postural changes was demonstrated. The normal reflex cardiovascular responses to hypercarbia and hypoxia were absent following use of hexamethonium in anesthetized patients.

Certain secondary effects of hexamethonium upon the anesthetized patient were investigated. These findings revealed an increase in circulation time, decrease in the ear capillary oxygen saturation, and an increase

in the cerebral arteriovenous oxygen difference accompanying moderate to severe hypotension. Electrocardiograms and electrocorticograms revealed changes consistent with hypoxia of the hearts and brains of patients in Fowler's position with marked hypotension.

The findings suggest that cerebral and coronary blood flow may be reduced and that cardiac output is decreased. (Studies in progress show an average reduction in cardiac output of 23.5%.)

The physiologic findings indicate that the production and maintenance of hypotensive anesthesia can be hazardous, since the capacity of the blood reservoir may exceed the blood volume. In such an instance it would be possible to render the brain completely ischemic by placing the patient in a steep Fowler's position. (Anesthesiology, Sept., 1954; F. H. Van Bergen, M. D., J. J. Buckley, M. D., L. A. French, M. D., A. B. Dobkin, M. D., and I. A. Brown, M. D., University of Minnesota, Minneapolis, Minn.)

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Pregnancy and Pulmonary Resection

Because the indications for pulmonary resection are being expanded, it is obvious that surgeons and obstetricians are going to be increasingly concerned with the ability of patients with diminished pulmonary tissue to meet the demands of pregnancy. Even more important will be the question of whether pulmonary resection can be performed during pregnancy with safety to the mother and fetus. The authors considered it worthwhile to collect from literature reports of pregnancy intimately associated with pulmonary resection and to record the experience of the Johns Hopkins Hospital with this combination.

A review of the case records of the Johns Hopkins Hospital revealed 15 cases in which pregnancy was intimately related to pulmonary resection. These cases extend over a period of 20 years, 1933 to 1953. Two cases were reported in which lobectomy was performed just prior to pregnancy; 6 cases of lobectomy occurred during pregnancy; 3 cases of pregnancy followed resection of 2 lobes; and 4 cases of pregnancy followed pneumonectomy. The salient features of these cases are presented in the article.

Fifty-seven cases of pulmonary resection, intimately associated with pregnancy, are known. These 57 patients have had 69 pregnancies: 7 were terminated by therapeutic abortion, 4 by spontaneous abortion, 8 by premature delivery, and 48 by term delivery. The outcome of 2 cases is unknown. There were 51 vaginal deliveries and 5 cesarean sections. One maternal death during the puerperal period was due to pulmonary infection. One infant was lost during the neonatal period, and 4 were stillborn. In only 6 cases has there been dyspnea or other clinical evidence of respiratory stress due to pregnancy.

From a recital of these statistics it is obvious that these patients not only have an excellent obstetrical record, but they have also been remarkably free of subjective evidences of undue respiratory strain. However, in order to pass final judgment on the safety of pregnancy associated with pulmonary resection, an evaluation of respiratory function of such cases during gestation is needed.

In normal pregnancy the increased ventilatory requirement is met by increase in depth of respiration. When the total lung volume is markedly decreased, the elastic limits of the thorax and lungs do not permit such a mechanism to be effective. The pregnant patient with severe pulmonary insufficiency, especially if the thoracic cage is also reduced in size, can therefore, only handle the increased ventilatory requirement by increasing her respiratory rate.

In both normal pregnancy and pregnancy complicated by pulmonary insufficiency, no essential changes take place in vital capacity and maximum breathing capacity as pregnancy advances. In Gaensler's patients the subdivisions of total lung capacity showed the changes which are characteristic of pregnancy, i. e. breathing with more deflated lungs.

The excellent obstetrical record of the 57 patients who have had pregnancies complicated by pulmonary resection demonstrates that patients with purely restrictive pulmonary insufficiency tolerate pregnancy well. Four conclusions of clinical significance are drawn: (1) Pneumonectomy and pulmonary resection are no contraindication to pregnancy provided the patient is not dyspneic at rest or on slight exertion. (2) Patients with pulmonary resections who are not dyspneic under normal conditions go through labor and vaginal delivery without difficulty. (3) Pneumonectomy and lobectomy may be performed during pregnancy with safety to mother and infant (if absolutely essential to the welfare of the mother). (4) Because of their reduced respiratory reserve, pregnant patients with pneumonectomy must be protected from any illness which will tend to reduce this limited reserve. (Am. J. Obst. & Gynec., Sept., 1954; G. W. Corner, Jr., and R. E. L. Nesbitt, Jr., Johns Hopkins University and Hospital, Baltimore)

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Study of Breast Abscess

This article presents a clinical and bacteriologic review of breast abscess for the period ranging from 1948 to 1953. This disease is a plaguing one for the obstetric service in any hospital and may assume epidemic proportions in a particular institution. Unfortunately, it is particularly plaguing to the mother and may result in a prolonged hospital stay, a disfigured breast, and a complete disruption of her family. Many interesting changes have been made possible in the treatment of mammary infection with the advent of the new antibacterial drugs. In the early part of this study

penicillin was the drug of choice. However, in following the progress of cases it became apparent that the particular *Staphylococcus aureus* which caused puerperal mastitis was consistently resistant to penicillin and had characteristics of a specific strain.

The treatment of puerperal mastitis is prophylactic, symptomatic, and surgical. Experience in 131 cultured cases showed that although penicillin is the recommended treatment, this drug is ineffectual, unless given in tremendous doses. It has a tendency, when given in such doses, to localize the abscess and attenuate the signs and symptoms. In two instances in this series a thick-walled abscess cavity was formed which was not absorbed. In the end it was necessary to remove this abscess because it had all the characteristics of carcinoma. Breast abscess does occur in women who are not postpartum and two instances are included in this series.

At the present time the drugs of choice in the prophylactic treatment are streptomycin, chloromycetin, terramycin, and aureomycin, the latter two being preferable. At the first sign of inflammation, usually observed by the obstetrician, the chosen drug should be administered in quantities of 250 to 500 mg. 4 times a day. This should abort the abscess. Aureomycin causes pruritus and vaginitis in some instances.

The symptomatic treatment is equivocal. Some believe that hot fomentations or cold fomentations of one sort or another are helpful in either inhibiting the progress of the inflammation or encouraging it to localize. Also the continuance of the baby's nursing on the affected breast, or the discontinuance of the baby's nursing actually seem to have no proved worth to either the mother or the baby. The question of the use of hormonal drugs to stop lactation, such as stilbestrol, would seem to be a wise move to prevent engorgement. However, there are instances in which lactation has subsided and the breast abscesses have formed and gone on to suppuration. Adequate support of the breast is about all that is necessary. The mother and baby are best left to themselves. Since the advent of this type of treatment, a sharp and quick decline in the number of infections of the breast which come to surgery, has been noticed. There are as many potential breast abscesses, but most of them were cured by antibacterial therapy. In 1950, thirty-five breast abscesses were documented, and in 1953, there were three.

If it appears that the breast abscess is not responding and is going on to suppuration, the patient should be immediately hospitalized. When the infection fails to show response to antibacterial therapy and there is definite localization, not necessarily with evidence of suppuration, the area should be incised and drained in a particular way.

When terramycin or aureomycin are used early and vigorously, the most severe infections can be completely aborted. However, if the administration is not begun until the infection is firmly established, unaided resolution is unlikely. (Surg. Gynec. & Obst., Sept., 1954; C. D. Sawyer, M. D., and P. H. Walker, M. S., The Methodist Hospital, Brooklyn, New York)

First Captain of Medical Service Corps - U. S. Navy

Captain Willard C. Calkins, a veteran of 35 years in the Naval service, has become the first Chief of the Medical Service Corps, U. S. Navy.

Captain Calkins was sworn into the newly created post by Rear Admiral Ira H. Nunn, Judge Advocate General of the Navy, at a ceremony in the office of Secretary of the Navy Charles S. Thomas, attended by Rear Admiral H. Lamont Pugh, Surgeon General of the Navy, and top ranking officers of the Navy Medical Department. The position of Chief of the Medical Service Corps was established by Congress in a public law which was signed on August 23, 1954.

Born in New Haven, Connecticut, September 30, 1899, Captain Calkins first enlisted in the Navy on April 9, 1919. Appointed a warrant pharmacist in 1929, he was promoted to chief pharmacist in 1935. Commissioned in the Hospital Corps in 1942, he advanced through the ranks to Commander, MSC, to rank from July 1, 1951. During his more than 35 years of Naval service, Captain Calkins has served at sea, ashore, and in the field with the Marines. (PIO, DOD)

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The Navy as a Career

The following excerpts are taken from a letter written by the Chief of Naval Operations to Vice Admiral A. S. Merrill, USN (Ret). Permission has been granted to use, in whole or in part, the information given in the basic letter.

1. What is being done to improve the caliber of officers and men, and to place a premium on ability?

Officers' promotions are being tightened up as a spur to superior performance. The policy of "selecting out" regular officers whose capabilities do not justify promotion to the higher grades is being resumed. The demand for high professional standards will soon include the use of correspondence courses and the re-institution of promotion examinations. Enlisted personnel who are unsuitable, or who are turning in inferior performances of duty, are being separated. Current reductions in force are being utilized to retain those whose particular skills and age-in-grade make them most desirable as career people. The best of the Reserve Officers, retained as lieutenant or below, will be offered an opportunity to transfer to the Regular Navy. Absenteeism is being discouraged and, with some necessary legislation, the authority of

Commanding Officers to enforce better discipline will be increased. Voluntary resignations of officers after 4 years of service are being permitted, except those with special voluntary commitments. Voluntary retirement after 20 years or more of service is being permitted on a carefully controlled and restricted basis, and will remain in effect unless abused. A transfer program is established for high caliber men in Chief and First Class Petty Officer ratings who desire to change over to skilled electronic ratings without demotion in ratings. A program is under way to improve sea and shore billets for those ratings who formerly had to spend a high percentage of their time at sea.

2. What is being done to ease the hardship on personnel due to world-wide defense commitments?

Lengthening command tours in the Fleet; reducing personnel turnover, and the unnecessary uprooting of men and their families; impressing all Commanders with their responsibilities in the field of public relations, including internal relations; facilitating and streamlining fleet operations to reduce the tension and pressures of fleet operations on the individuals concerned; assigning overall training responsibilities to the Commanders in Chief of the First and Second Fleets with instructions to fit training into operating schedules; appointing a standing committee on personnel readiness to provide better coordination between the Bureau of Naval Personnel and the Fleet; recognizing the need for a certain amount of specialization; reducing Western Pacific Forces so that a number of people are closer to home; abolishing in general sight relief for combatant ships on foreign station; increasing the ratio of operating time to yard overhaul for all ships; preparing yard overhaul programs requiring firm commitments 3 months in advance so that crew personnel can make plans accordingly.

3. What is being done to add to the dignity and satisfaction of a Service career?

Restoration of officers' dress uniform and sword; Sea Commanders particularly to keep their personnel as fully informed as possible of the nature and purpose of all missions; the consideration of increasing a man's sense of identification by returning to the old style hat band with the name of the man's ship or unit on it; giving names instead of numbers to the larger amphibious craft such as LST's; authorizing the wearing of rating badges on dungaree work uniforms as well as dress uniforms; wherever possible, permitting officers and men to travel with their families when going to a new

duty station; authorizing shore commanders to make facilities available on the station for luncheons, meetings, and recreational gatherings of Navy wives' clubs; increasing the dignity and pleasantness of shipboard living, particularly for the enlisted men, by providing recreational spaces, crew's lounges, better sleeping quarters, ample clothing storage, more appetizing food services, and a generally more livable and cheerful environment.

4. What is being done to increase the material rewards and the security of a Naval career?

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Under this heading are included some of the things accomplished, or which the Navy, in concert with the other Services, is trying to accomplish, such as: The Department of Defense is considering an across-the-board pay raise to put military people in a position to better cope with the increased cost of living. A law just passed provides more Wherry Act family housing. A bill in the hearing stage would provide more service owned housing, and steps are being taken to reduce rental on sub-standard housing. A new law increases the present reenlistment bonus to a phased bonus ranging from \$240. 00 to \$1238. 00; by giving larger bonuses to first time reenlistees who have achieved the highest ratings, a premium is placed on brains and ability. The old weight allowance for moving household effects is restored. A new law known as the Contingency Option Act makes possible on retirement to elect to receive a smaller retirement pay with such pay to continue during the lifetime of the wife, or until children are 18 years of age. A new law provides G.I. home loans for veterans remaining in the service. With the other Services, steps have been taken offering a certain number of extended duty "contracts" to Reserve Officers. Bills already submitted, or about to be submitted to Congress would: ensure medical care for dependents at government facilities, or provide reimbursement when such facilities are not available; increase pay in various hazardous duty specialties; provide a lumpsum payment to aid in defraying the burdensome cost of moving on change of duty; reduce restrictions on "dual" employment whereby retired personnel may be permitted to take a civil service job and earn up to \$6250. 00 without jeopardizing retirement pay; eliminate the inequities and inadequacies of the present pension system for the families of men who die on active duty.

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General Postgraduate Course Billets - Naval Dental School

Lieutenant Commanders and Lieutenants of the U. S. Naval Dental Corps who have not had the General Postgraduate Course, U. S. Naval

Dental School, NNMC, Bethesda, Maryland, are encouraged to apply for the 10 month course which will commence in September 1955. Those officers who will be due for sea or foreign shore duty during the summer and fall of 1955, and those whose normal tour of sea or foreign shore duty will not be completed by the summer of 1955, should not apply. Applications should be submitted at the earliest possible date and in accordance with the provisions of Article 6-82 ManMedDept. (DentDiv, BuMed)

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Dental Technician Training Opportunities

There are several opportunities for specialized and advanced training currently available to dental technicians on active duty. A shortage of applications exists for the dental prosthetic technician schools, Class "C", and the Advanced Course for General Dental Technicians and Dental Repair Technicians, Class "B" schools. There is also an opportunity for dental technicians to serve as Dental Research Assistants.

Dental Prosthetic Schools, Class "C". The next classes in these schools are tentatively scheduled to be convened on 10 January 1955, at the U. S. Naval Training Centers, San Diego, Great Lakes, and Bainbridge. An acute shortage of dental prosthetic technicians will become existant soon unless more technicians are given this training. Interested and qualified dental technicians should submit requests in accordance with BuMed Instruction 1510.2.

In order to reduce the high attrition rate in the prosthetic schools, the dental officer making the recommendation should determine that the applicant has the following minimal qualifications: Chalk carving, 10; DT Class "A" School Grade, 80; and Mechanical aptitude test, 40.

The foregoing scores may be found in each Enlisted Service Record. These scores should be shown in the applicant's request and the dental officer should state in his recommendation that they have been verified.

The chalk carving tests were instituted in the Class "A" dental schools in September 1953. Applicants who have not received the chalk carving test may be recommended on the basis of a suitable demonstration of manual dexterity in lieu of the test. A statement to this effect should be made in the recommendation in such cases. The current instruction covering the prosthetic course is in the process of being revised to include the above mentioned qualifications.

Advanced Course of Instruction, Class "B" Schools, General Dental Technician and Dental Repair Technician. Additional applications are desired for these schools. Both courses are tentatively scheduled to convene on 10 January 1955, at the U. S. Naval Dental School, National Naval Medical Center, Bethesda, Maryland.

Dental Research Duty. There is a need for dental technicians of all rates to serve as Dental Research Assistants. A limited number of personnel will be selected and ordered to duty at the Naval Medical Research Institute, National Naval Medical Center, Bethesda, Md., for at least one year, after which they will be classified as Dental Research Assistants.

Due to the highly technical nature of research assignments, applicants must be recommended by a dental officer and should be screened very carefully to ascertain that they possess all the necessary qualifications.

The requirements listed below are offered as a guide by which to examine candidates by personal interview and observation in their assigned duties: high school education desirable; interest in research work; ability to develop original ideas; attention to minute detail; patience, accuracy, and neatness.

Personnel selected for this duty will be required to have three years obligated service. Requests for this duty should be submitted to the Bureau of Medicine and Surgery (Code 6133) in the form similar to that outlined for requesting Class "B" and "C" dental technician schools. (DentDiv, BuMed)

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Correspondence Course, Naval Preventive Medicine

Objective type questions for the Medical Department correspondence course entitled Naval Preventive Medicine (NavPers 10703) are now available for distribution.

This course evaluation remains at thirty-six (36) Naval Reserve promotion and retirement points.

The text material for this course has not been changed. Officers who completed the earlier thesis type course for credit will receive no further credit for completion of this course. (Naval Medical School, NNMC, Bethesda, Md.)

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From the Note Book

1. Rear Admiral Lamont Pugh, MC USN, Surgeon General of the Navy, addressed the October Scientific Meeting of the Columbia Medical Society, Columbia, South Carolina, October 11, 1954. His subject was "What the Future of Medicine is in Relation to the Services." (TIO, BuMed)

2. Rear Admiral D. W. Ryan, DC USN, Assistant Chief for Dentistry, Bureau of Medicine and Surgery, attended the 68th Annual Meeting of the Colorado State Dental Association in Colorado Springs, Colorado, October 3-6, 1954, and participated in a panel discussion of military dental affairs. (TIO, BuMed)

3. Captain J. J. Sapiro, MC USN, Director of the Preventive Medicine Division, Bureau of Medicine and Surgery, attended meetings of the American Board of Preventive Medicine in Buffalo, New York, October 8-10, 1954. Captain Sapiro, who is Navy Member of this Board, also represented the Navy's Bureau of Medicine and Surgery at the 82nd Annual Meeting of the American Public Health Association in Buffalo, October 11-15, 1954. (TIO, BuMed)

4. Captain T. J. Canty, MC USN, returned to the United States on September 27, 1954, from Europe where he represented the Navy at the Sixth Congress of the International Society for the Welfare of the Crippled and Disabled. At this Congress which was held in The Hague, Holland, September, 12-18, 1954, forty-six countries were represented. More than 100 delegates from the United States were among the 800 delegates who attended. (TIO, BuMed)

5. Commander W. E. Ludwick, DC USN, Head of the Dental Branch, Research Division, presented a paper, "Relations of Dentrifrices to Caries Control", before the Lincoln District Dental Association, Lincoln, Neb., on October 4, 1954. (TIO, BuMed)

6. Commander C. A. Ostrom, DC USN, was recently awarded a letter of commendation from the Secretary of the Navy for meritorious performance of duty while attached to Naval Medical Research Unit Number One, Berkeley, California. (TIO, BuMed)

7. A new dental research facility has been established recently as a branch of the Dental Department, Naval Training Center, Bainbridge, Maryland, under the direction of Captain R. P. Irons, DC USN, Dental Officer of the Training Center. The new facility will carry on studies in biochemistry and bacteriology, particularly related to oral enzymes. The facility consists of a bacteriology laboratory, biochemistry laboratory, utility laboratory, and office. (TIO, BuMed)

8. A Seminar of Commanding Officers of Naval Reserve Medical and Dental Companies was held October 4-9, 1954, at the Bureau of Medicine and Surgery, Navy Department, Washington. This meeting provided opportunity to exchange information between responsible persons at the Bureau level and at the Reserve Company level. (TIO, BuMed)

9. A report of the procedure of diagnostic transabdominal pneumoperitoneum in children appears in Am. J. Obst. & Gynec., Sept., 1954; R. H. Kunstadter, M.D. and A. Tulsky, M.D.

10. Spasmus Nutan is a clinical entity in which nystagmus is associated with head nodding and anomalous head positions. This triad is so characteristic that there can be little doubt of the diagnosis when present in its entirety, but the diagnosis may be less certain when only one or two of the features are present. (Arch. Ophth., Sept., 1954; E. W. D. Norton, M. D., and D. G. Cogan, M. D.)

11. Cold injuries may be classified into 2 broad groups: (1) frostbite, which is due to the cytotoxic effect of intense cold; and (2) the trench foot syndrome which is due to capillary damage, thrombosis, and vaso-spasm following exposure to less than cytotoxic cold. (Postgrad. Med., Sept., 1954; W. P. Kleitsch and E. K. Connors)

12. The pharmacologic properties of Aramine, a sympathomimetic amine chemically related to propadrine, are reviewed. The drug appears to be a safe vasopressor for subcutaneous and intravenous administration. (Anesthesiology, Sept., 1954; M. F. Poe, M. D.)

13. The results of the combined use of splenectomy, cortisone, and/or ACTH in 25 patients with various blood dyscrasias are reported in Surgery, Sept., 1954; R. H. E. Elliott, Jr., M. D., and G. A. Hyman, M. D.)

14. The management of genito-urinary wounds in the combat zone is described in the Mil. Surgeon, Sept., 1954; Col. J. A. Kimbrough, MC USA (Ret)

15. A report discussing the chemotherapy of leukemia, Hodgkins disease, and the related disorders appears in Ann. Int. Med., Sept., 1954; M. M. Wintrobe, G. E. Cartwright, P. Fessas, A. Haut, and S. J. Altman.

16. The purpose and teaching value offered by a Department of General Practice in the Medical School is discussed in G. P., Sept., 1954; R. A. Davison, M. D.)

17. A case of primary carcinoma of the liver with early metastasis to the spine and initial symptoms of paraplegia is presented in Am. J. Med., Sept., 1954; R. D. Trevathan, M. D.

* * * * *

BUMED NOTICE 6320

10 September 1954

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations Having Medical Corps Personnel Regularly Assigned

Subj: Pilonidal cysts; comments concerning treatment and excessive morbidity.

This notice emphasizes the need for careful consideration in the evaluation of pilonidal cysts and the determination of proper therapy in the treatment thereof.

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BUMED INSTRUCTION 5712.1A

13 September 1954

From: Chief, Bureau of Medicine and Surgery
To: All Naval Hospitals

Subj: Mutual Defense Assistance Program trainees; medical disposition of

Ref: (a) OPNAV ltr Ser 2254P27 of 18 Jun 1952

✓

This instruction is issued to inform naval hospitals of proper disposition of Mutual Defense Assistance Program trainees physically unfit for training. BUMED INSTRUCTION 5712.1 is canceled.

* * * * *

BUMED NOTICE 6150

15 September 1954

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations Having Medical/Dental Personnel Regularly Assigned

Subj: Health records; disposition of when duty station or status of individual is unknown

Ref: (a) Art. 16-18(3), ManMedDept

This notice invites attention to reference (a) relative to the disposition of subject health records.

* * * * *

BUMED NOTICE 1085

21 September 1954

From: Chief, Bureau of Medicine and Surgery
To: Commanding Officers, Continental Hospitals

Subj: Navy and Marine Corps patients transferred by air transportation; transmittal of records in the case of

Ref: (a) OPNAVINST 4630.9
(b) Article C-5404, Bureau of Naval Personnel Manual

This notice invites attention to the loss or mishandling of patients' records when transferred between naval hospitals via air.

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BUMED INSTRUCTION 6260.3

24 September 1954

From: Chief, Bureau of Medicine and Surgery
To: Commandant of the Marine Corps
Chiefs of Bureaus and Offices

Subj: Utilization of civilian physicians at industrial activities

Ref: (a) SECNAVINST 6260.1

This instruction delegates authority to addressees to determine the need for civilian physicians and to determine the adequacy of their qualifications.

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BUMED INSTRUCTION 6320.17

28 September 1954

From: Chief, Bureau of Medicine and Surgery
To: Ships and Stations Having Medical/Dental Personnel Regularly Assigned

Subj: Medical and dental care for NATO personnel and their dependents

Ref: (a) BUMEDINST 6320.4B (addressed to all stations having medical/dental personnel regularly assigned)

This instruction is promulgated to provide information on U. S. Navy medical and dental care authorized for subject personnel assigned to full-time duty with the North Atlantic Treaty Organization, in the United States; the receiving state

SECNAV letter of 11 January 1952 to all naval hospitals and BUMED Circular Letter No. 51-29 are hereby canceled.

BUMED INSTRUCTION 6320.18

28 September 1954

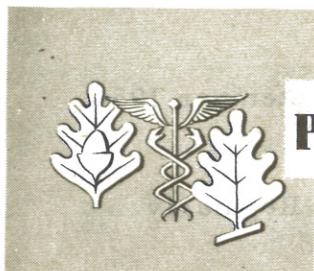
From: Chief, Bureau of Medicine and Surgery
To: All Naval Hospitals and Stations Having Infirmaries

Subj: In-patient medical care for dependents of foreign nationals other than North Atlantic Treaty Organization personnel

Ref: (a) BUMEDINST 6320.17

This instruction establishes the rates and procedures governing inpatient medical care for dependents of foreign nationals other than for dependents of military personnel assigned to full-time duty, in the United States, with the North Atlantic Treaty Organization. Instructions governing care for dependents of NATO military personnel are contained in reference (a). ✓

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PREVENTIVE MEDICINE SECTION

Communicable Disease Control

Scrub Typhus (Mite-Borne Typhus, Tsutsugamushi Disease)

1. General. a. Scrub typhus (mite-borne typhus, tsutsugamushi disease) is a febrile, infectious human disease caused by a specific rickettsial agent, the vectors of which are the larval stages of certain mites, or "chiggers." Clinically resembling other typhus-like diseases, it is characterized by a sudden onset, sometimes preceded by vague prodromata,

fever lasting approximately 2 weeks in untreated cases, a skin rash, usually the presence of an ulcerated, necrotic lesion, called the eschar, at the site of the attachment of the infected mite, and regional or generalized lymphadenopathy. Agglutinins for the OX-K strain of the *Proteus* bacillus can be demonstrated in sera of most cases by the end of the second week of the disease.

b. Immunological and serological identity have been established between scrub typhus, tsutsugamushi disease (Japanese river fever), rural or tropical typhus of the Federated Malay States, pseudo-typhus of the Netherlands Indies and Sumatran mite fever. Scrub typhus also has been found to be one component of "coastal fever" and Mossman fever of North Queensland, and may be one of the diseases described under the name of "Indian tick typhus." The disease among troops and civilians in Assam and Burma was essentially the same as the disease seen in New Guinea during World War II.

c. Scrub typhus assumed military importance when it was encountered during World War II operations in the Southwest Pacific area and in the China-Burma-India Theater among both Allied and Japanese Forces. Data on the latter are inaccurate, but among all Allied Forces, available statistics indicate approximately 18,000 cases. Among 11,000 cases for which comparable data are available, there were nearly 650 deaths. Case fatality rates varied in different epidemics between 0.6 and 35.3 percent in American troops.

2. Etiology. The causative micro-organism is Rickettsia tsutsugamushi (Rickettsia orientalis of some literature). This rickettsia is demonstrable with difficulty in human pathological tissue. It generally produces fatal infection in white mice inoculated with blood from patients or with tissues from other infected mice. In smears of peritoneal fluid and lesions from infected white mice the organisms can be demonstrated by suitable stains as minute intracellular bodies, frequently occurring in pairs within the cytoplasm but not the nuclei of parasitized cells. Although the guinea pig and monkey are susceptible, infection and death of these animals are not regularly produced by inoculation.

3. Geographical distribution. Scrub typhus has a widespread occurrence in the Asiatic-Pacific area in a roughly triangular region bounded by Japan, India, and Australia. Although the disease was reported originally only from northern Japan, scrub typhus since has been encountered in Formosa and the neighboring Pescadores Islands, six of the Philippine Islands, Associated States of Vietnam, Laos and Cambodia (Indo-China), Thailand, Burma, Assam, South China, various parts of India, Ceylon, the Maldives, Andaman and Nicobar Islands, Malaya, parts of Indonesia, Netherlands and British New Guinea and Papua, many islands in the Solomon group and the Bismarck Archipelago, and North Queensland in Australia. Military cases occurred on Espiritu Santo Island of the New Hebrides group, which was the most eastern location in the South Pacific.

Confirmed cases have been reported from Korea where a reservoir of infection is known to exist among wild rodents. So-called "Kunming fever" appears to have included cases of scrub typhus in the region of the China-Burma border. Occurrence of the disease in the Ryukyu Islands and the Yangtze Valley of North China remains to be confirmed. In Japan the chief endemic regions are the river valleys of northwestern Honshu in the prefectures of Akita, Yamagata, and Niigata; a new, more southern focus was discovered in 1948 as a result of cases among occupation troops on exercises on the slopes of Mount Fuji. ✓

4. Transmission. Scrub typhus is transmitted to man by the parasitic larvae of certain species of mites, mainly or entirely of the genus Trombicula, family Trombiculidae, order Acarina.

a. The Trombiculidae, known popularly as "harvest mites," "red bugs," or "chiggers," fall into the class Arachnida which are distinguished from the Insecta by the presence of four pairs of legs in the mature stages. After hatching from the eggs, they pass through three active stages, larva, nymph, and adult. The six-legged larval forms are parasitic on vertebrates. They do not take blood, but must have a feeding of lymph or tissue juice prior to metamorphosis to the nymphal and sexually mature stages. In the last two stages the mites live free in the soil and are not again parasitic on man or vertebrate animals after leaving the host as larvae. The adults lay their eggs in the ground, whereupon a new larval generation hatches out, and the cycle is repeated.

b. The six-legged larval form of the mite which attacks man is almost microscopic in size, varying from 0.15 to 0.4 mm. (0.006-0.016 inch). The larvae usually are red or pinkish in color (which is not due to host blood), and the body and legs are covered with fine hairs, the number, location, and length of which vary according to the species. The larvae attach themselves to the skin by means of their blade-like chelicerae (mouth parts) for feeding. On their customary small animal hosts, they tend to concentrate in and about the ears. Some species of mites which are not vectors of scrub typhus, such as the North American chigger and Schongastia spp. in New Guinea, cause a severe dermatitis with intense itching ("chigger itch" or "scrub itch") which occurs within a few hours of attachment.

c. Larval mites may be infected while feeding on an infected vertebrate host such as a wild rat, or they may "inherit" the rickettsial agents from their mothers. This one parasitic meal is all that is required in a given generation, and the infection acquired by a mite can be perpetuated by transovarial passage to subsequent generations.

d. There are numerous species of mites in the endemic regions, but the only two of demonstrated importance in human infection are Trombicula akamushi and its close relative T. deliensis, in both of which, in several localities, natural infection has been found. It is probable that several other species, such as Euschongastia indica which recently has been found to be naturally infected in Malaya, act as intermurid carriers. ✓

e. Less definite information is available concerning the vertebrate reservoir of scrub typhus. Naturally infected voles, Microtus montebelloi, in Japan and certain species of field rats and mice in Korea, Formosa, Assam, Burma, Malaya, New Guinea, and the Admiralty Islands, as well as shrews in Burma and Japan, have provided strains of scrub typhus rickettsia. It is probable that field mice, rats, and other small animals such as shrews, serve as the natural reservoirs of infection in various areas. These animals are customary hosts of mites; man serves only as an accidental host. Birds, especially ground-frequenting species, undoubtedly serve to spread vector mites, and infected T. deliensis have been taken off quail in Malaya.

5. Epidemiology. a. In general, transmission of scrub typhus is not necessarily limited by season in the tropics, but rather is associated with the arrival of troops or groups of susceptible laborers (including natives) into endemic areas, or with local agricultural pursuits which necessitate the entry of workers into such foci. In Japan and Formosa, however, definite seasonal incidence has been demonstrated, and a seasonal trend was reported among British troops in the Imphal area of the India-Burma frontier. In Malaya the disease is much more prevalent during the wet months than during the drier periods. Investigation has shown that the risk of military infection is maximal: (1) during the first 4 to 6 weeks after an organization has occupied a previously unused camp site in an endemic region; (2) when an organization engaged in combat is constantly moving into, and occupying new areas; and (3) in abandoned native village sites or abandoned areas previously developed in rural sections, such as neglected coconut plantations, which provide suitable cover for breeding of rats and mites.

b. Although the disease is focally distributed, experience with outbreaks in many types of ecological environment indicates that there is no typical scrub typhus area. There are certain factors, however, common to areas where an exposure hazard may be suspected. These common factors are conditions that provide suitable rodent cover and ground moisture favorable to the growth and activity of the specific mites which act as the vectors of scrub typhus. The danger of infection has been associated principally with the following types of terrain: (1) rank growths of volunteer grass, "Yoshi" and "susuki" in Japan, in fields along the courses of rivers subject to flood conditions; in New Guinea, in areas in which there are large "kunai" grass fields bordered by the jungle; in the Philippines and Malaya where secondary grass invaders known as "kogan," "talahib," and "lalang" have entered abandoned cultivated fields; (2) in Malaya, India, China, Burma, Sumatra, and Australia, in areas in which there is a thick luxuriant growth of "scrub" (a dense, low growth of trees, or shrubs, or a mixture of these, called "blukar" in Malaya, and "chena" in Ceylon); (3) in certain islands of the Bismarck, Schouten, and Philippine groups where undergrowth in neglected coconut plantations has favored an increase in local rat and mite populations; (4) also possibly in undetermined areas of the virgin jungle itself

in Burma, Malaya, and Netherlands New Guinea.

c. It seems likely that migratory birds play an important role in dissemination of mite vectors and infection, both locally around foci and distantly to isolated Pacific islands.

6. Pathology. Scrub typhus is basically a disseminated, focal vasculitis and perivasculitis of the smaller blood vessels. The vessels principally involved are those of the skin, lungs, heart, and brain.

a. Although endovasculitis, thrombosis, and hemorrhage may occur, these are conspicuously less marked than in European (epidemic) typhus. The vascular lesions consist of perivascular accumulations of monocytes, plasma cells, and lymphocytes, with moderate focal edema. In severe lesions, necrosis of adjacent tissue cells may occur, especially in the myocardium and brain nodules.

b. The vasculitis and perivasculitis in the lungs causes a true rickettsial pneumonia with swelling of the alveolar walls and exudate of large mononuclear cells, plasma cells, and lymphocytes into adjacent alveoli. Serum and red blood cells also are often present in the alveolar spaces. Bronchial and bronchiolar epithelium are intact. The picture as described may be complicated with the findings of a terminal broncho-pneumonia.

c. In severe vasculitis of the myocardial vessels, there may be infiltration of the interstitial tissue with mononuclear cells, edema, and, rarely, even small areas of focal necrosis of muscle fibers. The danger of permanent damage to the heart has been exaggerated.

d. The brain is frequently the seat of a focal perivascular reaction characterized by proliferation of glial cells and infiltration with large mononuclear cells.

e. The spleen shows enlargement with accumulations of large mononuclear cells, plasma cells, and lymphocytes in the sinusoids. There is a generalized enlargement of the lymph nodes, and the regional nodes, draining the site of the eschar, are more conspicuously involved than others and sometimes show necrosis upon section. Surrounding these areas of necrosis are accumulations of large mononuclear cells.

7. Clinical features. Following an incubation period of 6 to 21 days (usually 10 to 12), the onset of the disease is sudden and is associated with headache, chilliness, fever, conjunctival injection, and moderate generalized lymphadenopathy. During the first week, the fever rises in a step-wise fashion, reaching 102 degrees F. to 105 degrees F. by the beginning of the second week of disease. It ordinarily remains elevated until the beginning of the third week at which time it subsides by lysis. There may be wide swings in the temperature curve accompanied by profuse sweating, particularly if aspirin is administered. Headache may increase in intensity and become quite severe. The patient becomes apathetic, and in severe cases a muttering, restless delirium is observed. Anorexia is common.

a. Eschar. A small necrotic ulcer, called the eschar, is frequently seen at the former site of attachment of the infected mite. This primary lesion appears on the fourth or fifth day after infection as a small pink papule surrounded by a narrow zone of erythema. It increases in size during the next few days and, at about the time of onset of fever and headache, it consists of a papule 10 mm. wide and 2 mm. high containing several tiny vesicles and surrounded by a 5 to 10 mm. band of erythema. Within several days the lesion develops an ulcerated center which becomes covered by a black scab. The scab is often lacking when the lesion occurs in moist surface areas of the body, where a shallow punched out ulcer with a gray base several mm. in diameter is observed. The eschar may occur on any part of the body, but is found most frequently where clothes bind, i. e., around the waist, over the shoulders and in the groin, and where opposing cutaneous surfaces exist, i. e., axilla, scrotum, or perineum. Search should be made for the lesion with great care because it may be present on parts of the body not subjected to routine examination. The eschar can be found in the vast majority of Caucasians who acquire the disease but is noted in only 10 to 20 percent of the indigenous Asians with scrub typhus. Epithelization of the ulcer is usually completed within a week after defervescence in treated or untreated patients.

b. Rash. A characteristic skin eruption, ordinarily consisting of slightly raised dull or raspberry red macules, appears on the trunk from the fifth to the eighth day. This rash ordinarily fades within several days but, at times, may be of an evanescent character, appearing and disappearing the same day. It may extend to the arms and legs and at times assume a maculopapular character. An exanthem on the soft palate is occasionally seen. Rash is common in Caucasians and relatively rare in indigenous Asians.

c. Reticulo-endothelial system. (1) An almost constant finding is a generalized lymphadenitis of variable degree which appears early in the disease and persists for the duration of the active stage. The regional lymph nodes draining the eschar are likely to be more enlarged than elsewhere and somewhat tender. Adenopathy occurs so frequently in various febrile conditions in the tropics that the diagnosis requires support of other clinical and serological data in scrub typhus. (2) A slightly enlarged, tender spleen appearing at the end of the first week is common, but the value of this finding as a diagnostic point is questionable in view of the high incidence of splenomegaly caused by malaria in some of the regions in which scrub typhus is endemic.

d. Central nervous system. In addition to the usual apathy and headache commonly seen, confusion, disorientation, muscular twitching, nystagmus, and even convulsions may be observed. Variable degrees of deafness, ordinarily transient, have been reported.

e. Respiratory system. Cough early in the disease is frequent, and physical signs of pneumonitis, such as fine and medium moist rales over the lower lobes, are common. In severe cases, these signs may extend into the upper lobes with scattered sibilant rales, diminished breath sounds at the bases, and tachypnea with a tendency toward hyperpnea and cyanosis, presumably anoxic in nature. Frank dullness and tubular breathing are absent, but these may be found when a secondary bacterial pneumonia develops as a complication.

f. Circulatory system. Variable degrees of myocarditis may be present. In severe cases, tachycardia, hypotension, and signs of pulmonary congestion occur. Although these signs could be the result of damage of the myocardium of the left ventricle, other factors, such as peripheral vasodilatation and pneumonitis, must be taken into account. The possibility of permanent damage to the heart has been overemphasized.

g. Convalescence. Convalescence was protracted, and readmission to hospital several times for care of prolonged nervous or psychic difficulties was sometimes necessary before the introduction of specific antibiotic therapy. Now, treated patients recover rapidly and usually may be returned to sedentary types of duty within 2 weeks after becoming afebrile.

h. Second attacks. A second attack of scrub typhus may occur several years after the initial illness. Observations on naturally acquired disease have been augmented by studies on volunteers. Such persons are resistant to reinfection for some months after recovery but, after 1 to 2 years, the majority are susceptible to heterologous strains of R. tsutsugamushi. Resistance to the homologous strain persists for longer periods. (Dept. of the Army, Technical Bulletin, Medical 31; Dept. of the Air Force, Pamphlet 160-5-7, 26 Aug., 1954)

(To be continued in the 12 November issue of the Medical News Letter)

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General Sanitation

Shore-to-Ship Water Connections

A recent report of an investigation into the cause of an outbreak of gastroenteritis disclosed that a large ship had not complied with the current directives concerning shore-to-ship water connections. The following is an excerpt from that report:

"Inspection of the water supply. --Inasmuch as the only reasonable common factor that could be discovered among the patients was potable water, an investigation was made of fresh water sources and delivery. Fresh potable water is delivered to the dockside from the city distribution system. Connections for shipboard use are made by Public Works

personnel using the ship's own 2 and 1/2 inch fire hose. Potable fresh-water lines on the pier are marked only on the adjacent concrete sill. In some instances these identifying markings have disappeared, making it difficult or impossible to distinguish potable fresh- from polluted salt-water connections. Identical fittings permit the cross-connection of a polluted salt-water supply with a potable fresh-water supply. Such a connection existed where potable fresh-water was taken aboard near the afterend of the ship. One side of a "T" on the pier was connected to the fresh-water hose for the ship. The other side was connected to a polluted salt-water hose, which in turn was connected to an auxiliary salt-water pump on the pier, whose intake was less than 30 yards from portside scuppers of the ship. Fresh water was necessary as a primer for the pump, which was required in the event of failure of the regular salt-water distribution system. When first observed, it was noted that both hoses (potable fresh-water and polluted salt-water) were attached to the "T". A few minutes later the polluted salt-water hose was found to be detached; however, salt water was still present in the "T", collected among threads of the connection. No supervisory personnel of the Public Works Department were in evidence, indicating that authority for making connections to potable fresh-water lines may not rest at as high a level as is desirable."

Recommendations of the inspecting group were that all shore-to-ship connections for fresh water be made in accordance with the requirements of OpNav Instruction 9930.1 of 14 January 1954 and BuDocks Instruction 11330.4 of 20 April 1954.

The promulgation of an instruction does not necessarily indicate compliance. Medical officers and their representatives should be on the alert constantly for conditions similar to those described above which create severe hazards to the health of personnel.

* * * * *

Food Poisoning -- Disciplinary Action

A Naval vessel recently reported an outbreak of food poisoning involving 49 troop passengers. Creamed turkey was the food suspected of causing the outbreak. The etiological agent was believed to be staphylococcus because of the clinical picture and explosive onset of the epidemic.

The implicated food was prepared for, and served at, the noon meal. The leftover creamed food remained in the galley steam tables for 5 hours and 30 minutes, and was then served at the evening meal until the supply was exhausted. Holding food over without refrigeration for this length of time was in direct violation of instructions in the Manual of Naval Hygiene and Sanitation, NavMed P-126, which clearly outlines the dangers of exceeding a 2-hour holding time for prepared foods of this type. NavSandA

Publication 236 is explicit in stating that the time element should begin when food is removed from cooking heat and not after it is sliced or otherwise prepared.

The Staff Command considers this incident the result of gross negligence on the part of both operating and supervisory personnel in the food-service department, and has initiated disciplinary action against personnel involved.

* * * * *

Change of Address

Please forward requests for change of address for the News Letter to: Commanding Officer, U.S. Naval Medical School, National Naval Medical Center, Bethesda 14, Md., giving full name, rank, corps, and old and new addresses.

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The printing of this publication has been approved by the Director of the Bureau of the Budget, June 23, 1952.

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